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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,684	04/03/2006	Hans-Peter Lobl	DE03 0341 US1	2110
65913	7590	05/06/2008	EXAMINER	
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			TAN, VIBOL	
			ART UNIT	PAPER NUMBER
			2819	
			NOTIFICATION DATE	DELIVERY MODE
			05/06/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No. 10/574,684	Applicant(s) LOBL ET AL.	
	Examiner Vibol Tan	Art Unit 2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-11 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 and 8-11 are rejected under 35 U.S.C.102(b) as being anticipated by Klee et al. (US 2001/0048352).

In claim 1, Klee et al. teaches all claimed features in Fig. 1, a resonator structure, in particular a bulk- acoustic-wave resonator, such as a film BAW resonator or a solidly-mounted BAW resonator , comprising at least one substrate (1); at least one reflector layer (2) applied or deposited on the substrate (1); at least one bottom electrode layer (5), in particular bottom electrode, applied or deposited on the reflector layer (portion of 5); at least one piezoelectric layer (6), in particular C-axis normal piezoelectric layer, applied or deposited on the bottom electrode layer, at least one top electrode layer (7), in particular top electrode, applied or deposited on the bottom electrode layer and/or on the piezoelectric layer (6) such that the piezoelectric layer is in between the bottom electrode layer (5) and the top electrode layer (7) characterized by at least one dielectric layer (8) applied or deposited in and/or on at least one space in at least one region of non-overlap between the bottom electrode layer and the top electrode layer.

In claim 2, Klee et al. further teaches the resonator structure according to claim 1, characterized in that the dielectric layer (8) is deposited in such way that the total

thickness of the region of non-overlap between the bottom electrode layer and the top electrode layer is equal to the total thickness of the region of overlap between the bottom electrode layer and the top electrode layer thus implying a planarisation of the resonator structure or that the thickness of the dielectric layer (8) as deposited in the region of non-overlap between the bottom electrode layer and the top electrode layer is chosen other than that required for planarisation.

In claim 3, Klee et al. further teaches the resonator structure according to claim 1, characterized by at least one mass loading layer (10) applied on the top electrode layer (7) and/or on the dielectric layer.

In claim 4, Klee et al. further teaches the resonator structure according to claim 3, characterized in that the mass loading layer (10) and/or the dielectric layer and/or the top electrode layer can be thickened (it thickens where it dents on 10) at least one region of at least one parallel resonator or shunt resonator and/or can be thinned, opened and/or removed in at least one region of at least one series resonator.

In claim 5, Klee et al. further teaches the resonator structure according to at least one of claim 1 characterized in that the resonator structure comprises at least one rounded edge (round edge at corner of 7) and/or that the top electrode layer is smaller than the bottom electrode layer.

In claim 6, Klee et al. further teaches the resonator structure according to claim 1, characterized in having electrodes (5, 7) whose edges define the edge of the resonator, which are thin compared to the total thickness (combined thickness of

electrodes (5, 7) and piezoelectric (6) is thicker than a thickness of the electrode 5 or 7) of the resonant cavity.

In claim 8, Klee et al. further teaches a filter (tunable filter arranged with at least two resonator; abs.) comprising at least one resonator structure according to at least one of claim 1.

In claim 9, Klee et al. further teaches the filter according to claim 8 in Fig. 2, characterized by more than one closely-spaced resonator structure (R1 and R2) with widths of gaps between the resonator structures (R1 and R2) adjusted to give appropriate acoustic coupling and compatibility with mask design rules.

Method claims 10 and 11 correspond to detailed circuitry already discussed similarly with regard to claims 1 and 4.

3. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vibol Tan whose telephone number is (571) 272-1811. The examiner can normally be reached on Monday-Friday (7:00 AM-4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rexford Barnie can be reached on (571) 272-7492. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2819

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vibol Tan/
Primary Examiner, Art Unit 2819